Tasmanian Government

Certificate of Accreditation

On-Site Waste Water Management System

This Certificate of Accreditation is hereby issued by the Minister for Justice and Workplace Relations pursuant to Section 59(2) of the Building Act 2000 and Part G2 of the Tasmanian Plumbing Code 2006.

System:	**Envirocycle (Tas) 10ANR**
Manufacturer/	**Professional Plumbing Pty Ltd**
Supplier:	**ACN 009 580 705**
Of:	**91 Lampton Ave, Derwent Park TAS 7009**

*This is to certify that the **Envirocycle (Tas) 10ANR** Aerated Wastewater Treatment System (the system), as described in Schedule 1, has been accredited for use as an on-site waste water management system in single dwellings (within plumbing installations in Tasmania). This accreditation is subject to the conditions and permitted uses specified in Schedule 2, and in accordance with the Tasmanian Plumbing Code.*

Kerrie Crowder
Director of Building Control
delegate of the Minister for Justice and Workplace Relations

Date of Issue: 17 May 2012 **Certificate No: BSR0621/2012**

This Certificate of Accreditation is in force until 16 May 2017

SCHEDULE 1: Specification

Envirocycle (Tas) 10ANR Aerated Wastewater Treatment System

General Description

The Envirocycle (Tas) 10ANR ('the system') collects and treats domestic wastewater.

For treatment system schematic drawings and flow path, refer to Appendix A.

For Engineering drawings refer to Appendix B.

For treatment system components list, including concrete tank specifications, refer to Appendix C

System Components

The system consists of one 6388L vertical-axis pre-cast reinforced concrete cylinder containing:

- A 1478L primary sedimentation anaerobic chamber;
- A 1698L anerobic filtration chamber;
- A 2065L contact aeration chamber
- A timer-controlled Air Blower which operates at 80 L/minute when timed on;
- A 407L secondary sedimentation chamber;
- A 336L pump-out/disinfection chamber housing a chlorine dispenser and a submersible irrigation pump;
- High level float switches;
- A sludge return system in the secondary sedimentation chamber constructed of UPVC pipe and operated by the Air Blower;
- A Control module and programmable logic controller (PLC) air blower timer; and
- An audio-visual alarm system.

Certification to AS/NZS 1546.3 for *systems* manufactured at **91 Lampton Ave, Derwent Park, Tasmania** has been given by **Geo Environmental Solutions (Hobart)**. The *system* is designed to treat a maximum Hydraulic Load of 2500 Litres of domestic wastewater per day from residential premises. The Raw Influent used in the testing of the system met the requirements of *AS/NZS 1546.3:2008* Appendix A4.1.

Energy consumption

The estimated Electricity Usage is based on a 4 person household with average wastewater flows and loads.

Electrical Equipment	Watts	Daily operation (hours) specified by manufacturer	kWh/year	Estimated Annual Cost @ ~$0.25/kWh
Air Blower - Zenox	60	18	394	$99
* Irrigation pump -Zenox ZHS040	400	1.5	219	$55
Controller & remote alarm - Matelec	2.4	24	21	$5

* Note:
The irrigation pump hours of operation may vary depending on influent flow volume. Also, a pump with different specifications to the Zenox ZHS040 may have to be installed where the head and flow performance is not adequate for the site conditions. Therefore, this will result in an adjustment to the estimated annual energy costs.

Description of Treatment Processes

Wastewater enters the primary (anaerobic septic) chamber where the bulk of the organic and inorganic solids are retained, by either settling to the bottom of the chamber or floating to the surface.

The clarified sewage flows into a second anaerobic settling (filtration) chamber before passing into the aeration chamber. Organic material in the wastewater is consumed by anaerobic microbes in the first two chambers and by aerobic microbes in the aeration chamber (see Figure 1 and Appendix A).

The 80 litre per minute air blower forces air through micro diffusers located in the aeration chamber. This supplies oxygen to aerobic microbes in the biomass suspended within the water column and attached to the fixed media.

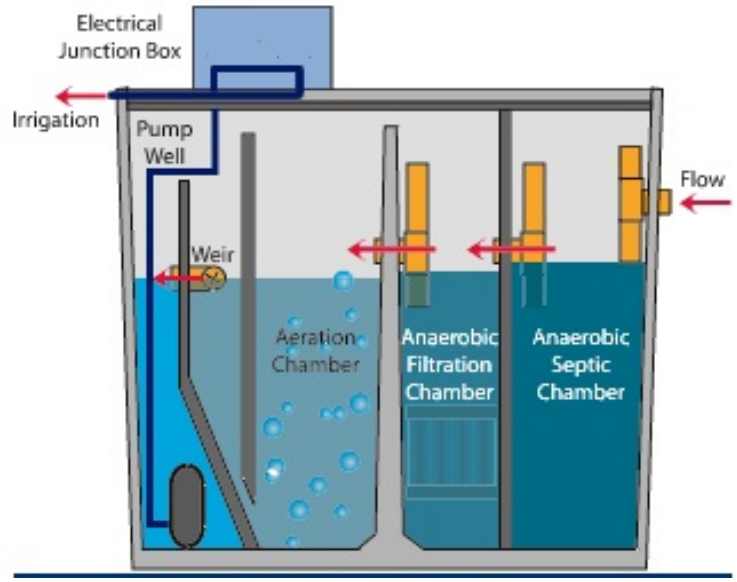


Figure 1 General View

The Blower is pre-set to operate on a pre-determined on/off cycle throughout a 24 hour period in order to provide aeration which matches the design organic loading and achieves the design nitrogen/nutrient reduction.

The biologically treated water flows from the aeration chamber into the clarification/sedimentation chamber to allow settling of suspended particles to occur. A sludge return pipe located in the clarification/sedimentation chamber transfers accumulated settled sludge back to the primary chamber for further treatment.

The clarified effluent is then disinfected as it flows over chlorine tablets into the effluent storage chamber (pump-well). A float switch attached to the pump controls it to periodically discharge the effluent to the irrigation field. A high-level alarm located in the pump well detects high water levels.

Emergency storage capacity of not less than 1000 litres without cross contamination in accordance with clause 2.4.8 of AS/NZS 1546.3:2008 is provided within the primary treatment chambers of the system.

The primary tank is de-sludged every five years or less as deemed necessary by the service contractor.

The *system* is fitted with a control panel containing a programmable logic controller (PLC).

The *system* is designed to treat all household wastewater from the kitchen, bathroom, toilet and laundry.

Hydraulic and organic loading and effluent quality

Influent

Design flow, as specified by the manufacturer,

- Daily flow (maximum hydraulic load) 250 litres per person, 10EP = 2500 litres

Organic loading, as specified by the manufacturer,

- Daily BOD_5 70 grams per person, 10EP = 700 grams per day
- Daily TSS 70 grams per person, 10EP = 700 grams per day
- Daily Nitrogen 15 grams per person 10EP = 150 grams per day
- Daily Phosphorus 2.5 grams per person, 10EP = 25 grams per day

Effluent

The effluent test results for 90% of samples tested showed:

- BOD_5 less than or equal to 20.0 mg/L
- TSS less than or equal to 30.0 mg/L.
- E. coli less than or equal to 10cfu/100mL
- Total nitrogen concentrations less than or equal to 50 mg/L
- Total phosphorous concentrations less than or equal to 5 mg/L

Schedule 2: Conditions of Accreditation

1.0 Definitions

In this schedule:

AS/NZS 1547 means the Joint Australian/New Zealand Standard '*AS/NZS 1547:2000 On-site domestic-wastewater management*';

AS/NZS 1546.3 means the Joint Australian/New Zealand Standard '*AS/NZS 1546.3:2008 On-site domestic wastewater treatment units, Part 3: Aerated wastewater treatment systems*';

AS/NZS 3000 means the Joint Australian/New Zealand Standard '*AS/NZS 3000:2000 Wiring rules*'

AS/NZS 5667 means the Joint Australian/New Zealand Standard '*AS/NZS 5667.1:1998 Water quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and preservation and handling of samples*';

BOD_5 means '5-day Biochemical Oxygen Demand';

cfu means colony forming unit

Council means 'the Municipal Council having jurisdiction';

Commissioned means 'when the test results from a NATA Certified Laboratory show that the water quality requirements for the AWTS have been met and all pre-commissioning tests have been carried out in accordance with AS/NZS 1547 on all associated equipment and land application system';

Designer means 'a person who is accredited under the *Building Act 2000* or a Plumber who has a specialty in the area of designing on-site waste water management system installations,;

Director means 'the Director of Building Control';

EC means electrical conductivity

E. coli means 'Escherichia coli of the family Enterobacteriaceae which is a bacterium used in public health as an indicator of faecal pollution';

g/m^3 means grams per cubic metre

Manufacturer means '**Professional Plumbing Pty Ltd'**;

NATA means 'National Association of Testing Authorities';

PCA means 'Vol. 3 of the National Construction Code (Plumbing Code of Australia)';

Permit means 'a Permit issued by the *council* pursuant to section 82 of the *Building Act 2000*';

Permit authority means 'a person or body authorised for that purpose by the *council* of the municipal area in which the on-site waste water management system is installed';

Plumber means a person who holds an appropriate class of licence under the *Occupational Licensing Act 2005* as a Plumber Practitioner (Certifier).

Supplier means 'the party that is responsible for ensuring that products meet and, if applicable, continue to meet, the requirements on which the certification is based.' The supplier for the **Envirocycle (Tas) 10ANR** is '**Professional Plumbing Pty Ltd.'**

System means '**Envirocycle (Tas) 10ANR'**

TPC means the 'Tasmanian Plumbing Code'.

TSS means 'Total Suspended Solids'.

2.0 General

2.1 The *system* must be supplied, constructed and installed in accordance with the design submitted and accredited by the *Director*.

2.2 The *system* must not be installed or used in a plumbing installation other than in accordance with the conditions of the permit issued by the *Permit Authority*.

2.3 Each *system* must be permanently and legibly marked on a non-corrosive metal plaque or equivalent, attached to the lid with the following information:

- The brand and model name or designation of the system;
- The *manufacturer's* name or registered trademark;
- Top load limitations; and
- The month and year of manufacture.

2.4 The *supplier* must supply the owner and occupier of each installation with a user manual setting out the following:

(a) the treatment process;
(b) procedures to be followed in the event of a system failure;
(c) emergency contact number;
(d) care, operation, monitoring and maintenance requirements; and
(e) inspection and sampling procedures to be followed as part of the on-going monitoring and program required by the *permit authority*.

2.5 Any proposed modifications to the *system's* specified processes, equipment, materials, fittings or manuals must have prior authorisation in writing from the *Director* and may be subject to additional verification or testing.

2.6 Each application to a *permit authority* to install a *system* must be accompanied by a site-and-soil evaluation report and design report in accordance with *AS/NZS 1547* as appropriate.

2.7 The *supplier* must provide the following information to each *permit authority* where it is intended to install a *system* in their jurisdiction:

- Statement of warranty
- Statement of service life
- Quality Assurance Certification
- Installation Manual
- Service Manual
- Owner's Manual
- Service Report Form
- Engineering Drawings on A3 format
- Detailed Specifications
- Certificate of Accreditation and Schedules.

2.8 This Certificate of Accreditation is valid for five (5) years from the date of issue or until withdrawn by the *Director* and is not transferable. Any application for variation or renewal must be accompanied by Product Certification that has been issued by a JAS-ANZ accredited Conformity Assessment Body (CAB) and other required documentation in accordance with the latest Application for Accreditation Form.

2.9 At each anniversary of the accreditation date the *supplier* must submit to the *Director* a list of all *systems* installed in Tasmania during the previous 12 months. The *Director* may randomly select up to 10% of the installed systems from each year of installation. The *Director* will notify the *supplier's* nominated *NATA* accredited laboratory which systems are to be sampled and tested for BOD_5 and

TSS and Chlorine residual. The sampling and testing of the selected *systems* is to be done at the *supplier's* expense. The following results must be reported to the *Director:*

- Address of premises;
- Date inspected and sampled;
- Sample identification number;
- Chlorine Residual;
- $BOD_{5;}$
- *TSS*;
- Total nitrogen concentrations
- Total phosphorous concentrations and
- Service history

2.10 Where, due to a design fault, the *system* has been found not to operate satisfactorily during its service life and as a result requires modification to achieve the required water quality limits, all installed *systems* are to be modified accordingly.

2.11 When granting a *permit* the *permit authority* is to satisfy itself that the *designer's* choice of the *system* configuration is optimal for the proposed use and site conditions.

2.12 The *system* must not be deployed to areas where seasonal climatic conditions will negatively affect its proper operation (refer to *manufacturer's* specifications).

2.13 Prior to the granting of a *permit* to install a *system* the following reports must be submitted with an application to the *permit authority*:

Site-and-soil evaluation report

The site and soil evaluation report is to detail results of an assessment of the individual lot(s) for the public health, environmental, legal and economic factors which are likely to impinge on the location and design of a land-application system. (Refer to AS/NZS 1547 Clause 4.1.5 and associated appendices to 4.1).

Design report

The Design Report is to include the following:

(a) Relevant aspects of the Site-and-soil Evaluation Report.

(b) A report on the selection of the land-application system. (Refer to AS/NZS 1547, Clause 4.2.4 and associated appendices to Clause 4.2 for further information).

(c) A report on the selection of the wastewater-treatment unit. (Refer to AS/NZS 1547, Clause 4.3.6 and associated appendices to Clause 4.3 for further information).

(d) Sufficient information to show that the relevant performance requirements set out in the *PCA* have been met.

(e) A loading certificate which sets out the design criteria and the limitations associated with use of the *system* and incorporates such matters as:

(i) System capacity (number of persons and daily flow);

(ii) Summary of design criteria;

(iii) The location of and use of reserve areas;

(iv) Use of water efficient fittings, fixtures, or appliances;

(v) Allowable variation from design flows (peak loading events);

(vi) Consequences of changes in loading (due to varying wastewater characteristics);

(vii) Consequences of overloading the system;

(viii) Consequences of underloading the system;

(ix) Consequences of lack of operation, maintenance and monitoring attention; and

(x) Any other relevant considerations related to the use of the system.

2.14 The following reports must be submitted to the *permit authority* and owner and be made available to the *Director* upon request after *commissioning* of the *system*:

- *Installation and commissioning report*

The Installation and Commissioning Report is to cover the 'as-constructed' records of the *system* installation together with the results of *commissioning* tests to demonstrate correct construction and installation and is to be provided to the owner and *permit authority* on completion of the work. (Refer to and AS/NZS 1547 Clause 4.5.6.3 and associated appendices to Clause 4.5).

- *Inspection and Maintenance Report*

Maintenance reports cover ongoing inspection and maintenance operations in order to monitor the operation of the installation. (Refer to AS/NZS 1547 Clause 3.7.4 and associated Appendix 3A).

2.15 Where the supplied pump is not suitably rated for the proposed land application area it must be replaced with a pump which has a rated capacity that matches the hydraulic characteristics of the irrigation system and be capable of discharging at least 50% more than the 30 minute flow rate. For drip irrigation systems, ensure that drip emitter flow rates do not vary more than 10% from the design rate over the whole of the system when installed on a sloping site.

Note: The pump selection is to be based on flow, head loss and pressure requirements.

2.16 Effluent distribution by sub-surface application may be permitted where the *Permit Authority* is satisfied that the application for a *permit* to install the *system* has demonstrated that the:

(a) effluent can be retained within the authorised land application area;

(b) where applicable the land application system has been designed and is capable of being installed and maintained in accordance with *AS/NZS 1547*;

(c) the location of the land application system satisfies the relevant requirements of the *State Policy on Water Quality Management 1997*; and

(d) the discharge is capable of satisfying the relevant water quality limits (see 5.7).

3.0 Installation and Commissioning

3.1 The installation and operation of the *system* must comply with the conditions of accreditation and the *manufacturer's* instructions.

3.2 All plumbing work carried out in connection with the *system* installation must satisfy the requirements of the *Building Act 2000*, *TPC* and the Tasmanian Plumbing Regulations and be carried out by a registered *plumber* with appropriate training and qualifications.

3.3 All installations of the *system* must satisfy the installation requirements set out in *Appendix A1 – On-site Waste Water Management Systems* of the *TPC*.

3.4 All electrical work must be carried out by a licensed electrician and in accordance with relevant provisions of *AS/NZS 3000*.

3.5 The *system* requires a 240V AC power supply. A weather-proof isolating switch must be provided at the power outlet. The power supply must have its own clearly marked designated circuit breaker in the electricity supply fuse box.

3.6 Each *system* installation must be inspected and checked by the *designer* or the designer's agent. The *designer* on completion is to certify that the *system* has been constructed, installed and *commissioned* in accordance with its design, the conditions of accreditation and any additional requirements set out in the *permit*.

Note: Where the *designer* is not available to supervise the installation the *designer* should obtain signed certification from the installing plumber stating that the installation has been constructed/installed and *commissioned* in accordance with its design, the conditions of permit.

3.7 Where discharging wastewater to a land application system by irrigation, a lockable sampling tap or gate valve is to be provided on the outlet pipe to the irrigation system.

3.8 A report is to be prepared by the *council* approved plumbing contractor detailing the inspection of the installation and the results of the *commissioning* tests and be accompanied by a certificate certifying that the system is operating and performing adequately .

3.9 Copies of the following reports/certificates must be submitted to the *council* and the owner as soon as practicable after the commissioning of the *system* and after each scheduled or unscheduled service or inspection for the period specified in the *permit*:

(a) The initial plant installation and commissioning report;

(b) All required laboratory analytical test reports; and

(c) All inspection and maintenance reports

3.10 Copies of any report or certificate required by the conditions of accreditation must be made available to the *Director* on request.

3.11 The *designer* is to provide a statement warning the user of which items and products that must not be placed in the *system*.

3.12 To verify that the plant is commissioned, sampling must be carried out, by a *council* approved person, for BOD_5, *TSS* and Free Residual Chlorine. The samples are to be tested and reported on by a NATA certified laboratory.

4.0 Maintenance and monitoring

4.1 Each installation must be serviced and monitored at not less than 3 monthly intervals in accordance with the conditions of accreditation, the conditions of *permit* and *manufacturer's* requirements.

Notes:

1. Only a *plumber* can carry out the maintenance and required monitoring of the *system* other than electrical work unless licensed to do so.
2. The *plumber* may need to complete training by the *supplier* before carrying out any maintenance on the *system*.
3. The maintenance and monitoring intervals may be combined provided the monitoring frequency remains at 3 month intervals.

4.2 The owner of the *system* must enter into and maintain a maintenance contract with the *council*, the *supplier* of the *system*, or other *council* approved plumbing contractor.

4.3 The owner must enter into an agreement with the *council* to maintain the maintenance contract where that contract is with the *supplier* of the *system* or other *council* approved plumbing contractor.

4.4 The *system* must be operated and maintained to ensure it performs continuously and without any intervention between inspections carried out by the *council* approved plumbing contractor.

4.5 A service report is to be prepared by the plumbing contractor who carried out the work detailing the inspection of the installation and the results of all servicing tests and conditions at the completion of all scheduled or unscheduled services or inspections.

4.6 The service report is to be accompanied by a signed document certifying that the system is operating and performing adequately.

4.7 A copy of the service report and certifying document is to be provided to the occupant and *council*. Each service report is to contain a statement reminding the user about items and products that must not be placed in the *system*.

4.8 Each service must include monitoring the operation of the *system* and associated land application system.

4.9 Maintenance must be carried out on all mechanical, electrical and functioning components of the *system* as appropriate.

4.10 The monitoring, servicing and reporting of the installation must include but not be restricted to the following matters, as appropriate:

(a) Reporting on weather conditions, ambient temperature, effluent temperature;

(b) Odour;

(c) Check and test pump

(d) Check and test air blower, fan or air venturi and clean/replace air filters;

(e) Check and test alarm system;

(f) Check slime growth on membranes and report the on condition of membranes;

(g) Check and report operation of sludge return, sludge level and de-sludging;

(h) Check and record water meter reading (if fitted);

(i) Check and record operation of irrigation area, irrigation fittings;

(j) Check and clean/replace irrigation filters;

(k) Check and report on water quality (testing for pH, Turbidity, EC and dissolved oxygen);

(l) Check, and replenish chlorine disinfection system;

(m) Cleaning of the following items at above the waterline–

I. clarifier,

II. pipework,

III. valves

IV. walls of chambers

5.0 Performance

5.1 Hydraulic and Organic Loading:

The *system* is accredited for treatment of domestic wastewater from residential and commercial premises with the following MAXIMUM hydraulic and organic loads:

Model	**Max Hydraulic load (L/day)**	**Biochemical Oxygen Demand (g/day)**
Envirocycle (Tas) 10ANR	**2500**	**700**

Treated effluent from the system must not exceed the following limits (90% of samples):

For sub-surface irrigation:	
5-day Biochemical Oxygen Demand (BOD_5)	20 g/m^3 (max. 30 g/m^3)
Total Suspended Solids (TSS)	30 g/m^3 (max. 45 g/m^3)
For surface irrigation:	
5-day Biochemical Oxygen Demand (BOD_5)	20 g/m^3 (max. 30 g/m^3)
Suspended Solids (SS)	30 g/m^3 (max. 45 g/m^3)
E. coli	10 cfu/100 mL (max. 20 cfu/100 mL)
Free Residual Chlorine concentrations	≥ 0.5 $g/m^3$and less than 2.0 g/m^3

6.0 On-going management

6.1 The mandatory servicing and monitoring is to commence 3 months after the plant is *commissioned*. The servicing and monitoring is to coincide with the *supplier's* required on-going routine scheduled maintenance program.

6.2 Where a *system* installed at a site has been found not to operate satisfactorily during its service life, and as a result requires modification to achieve the required performance requirements, in particular, water quality limits, the installed *system* is to be modified accordingly. Any modifications must be recorded on the service report.

6.3 In the event of failure to comply with the water quality limits set out in these conditions, fortnightly sampling and testing for *BOD_5*, *TSS* and Free Residual Chlorine must be carried out until the plant is *re-commissioned.*

6.4 The method of preserving and the handling of samples taken from the plant must satisfy the relevant requirements of *AS/NZS 5667.*

6.5 Copies of the following reports and certificates must be submitted to the *permit authority* and the owner as soon as practicable after the *commissioning* of the *system* and after each scheduled or unscheduled service for the period specified in the *permit:*

(a) the initial plant installation and *commissioning* report
(b) all laboratory analytical test reports; and
(c) all inspection and maintenance reports

6.6 The system is to be de-sludged every five years strictly in accordance with the *manufacturer's* recommendations and the sludge is to be disposed of in accordance with the Tasmanian Biosolids Reuse Guidelines and the conditions of *permit.*

6.7 Only persons with a waste transport business Environment Protection Notice are to be engaged for the removal, transporting and disposal of accumulated sludge removed from the *system.*

6.8 Any waste material removed from the system must be collected and disposed of or utilised by an approved facility or agency.

6.9 Measures are to be put in place so that during servicing activities all persons and the environment will be protected from the results of the servicing activities.

7.0 Permitted uses

7.1 The effluent is suitable for land application by any of the following methods:

(a) sub-surface by:
  i. subsurface drip irrigation
  ii. trenches, beds, mounds, evapo-transpiration systems

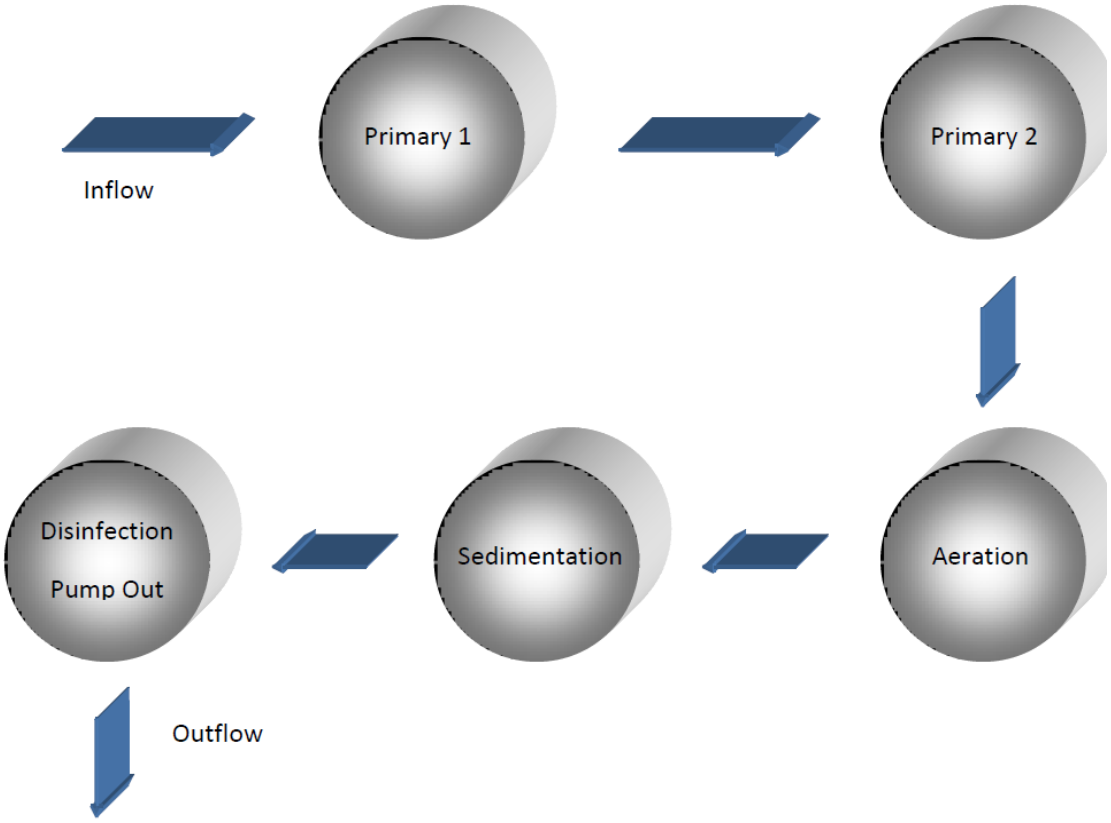
(b) above ground by:
  i. spray irrigation
  ii. surface drip irrigation

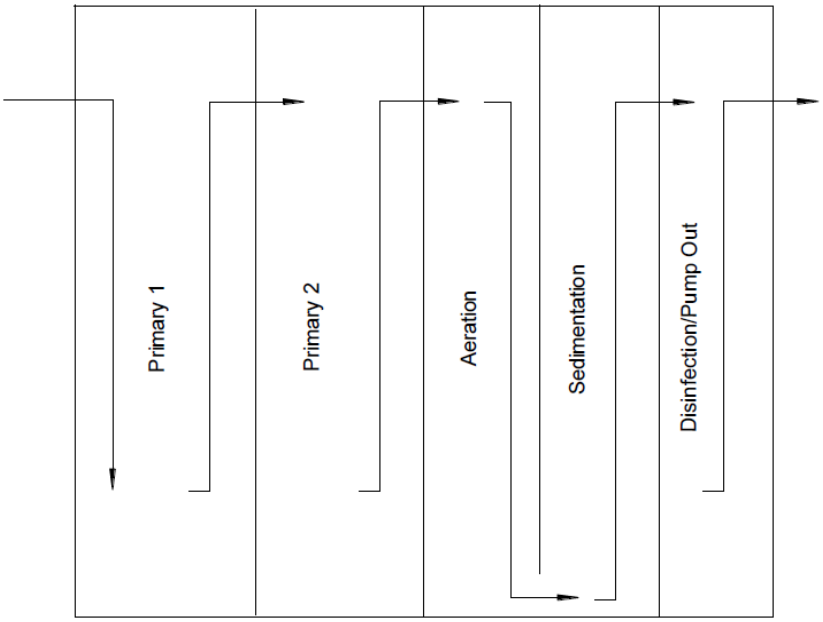
Note: Each of the above forms of Land Application is subject to consent from the *permit authority* and must be in accordance with the relevant provisions of *AS/NZS 1547*.

7.2 Where it is not practicable for effluent from the system to be applied in accordance with *AS/NZS 1547,* the method of discharge must satisfy contemporary relevant regulatory requirements to the satisfaction of the *permit authority.*

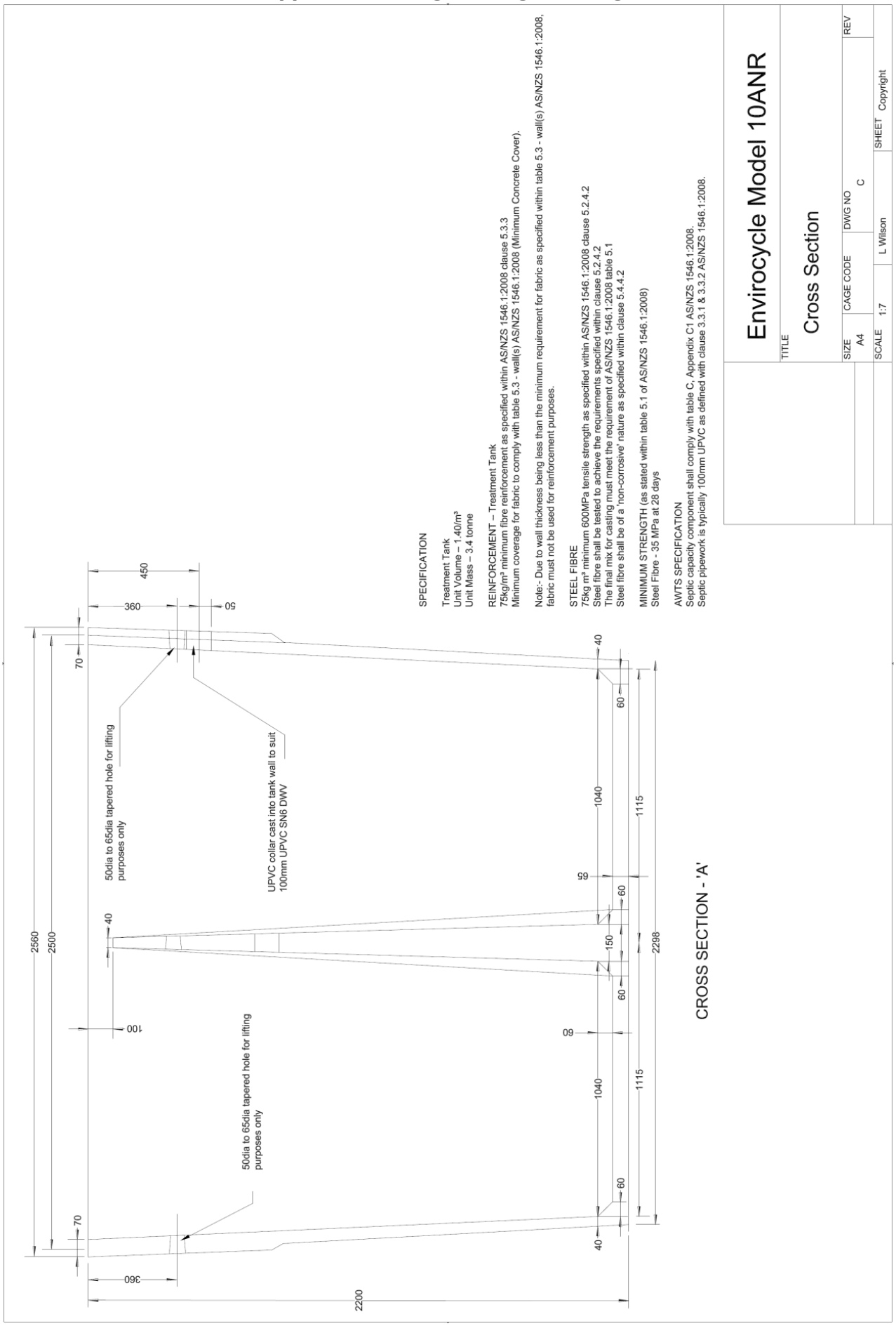
Appendix A - Schematic drawings, Process Flow

Envirocycle (Tas) 10ANR



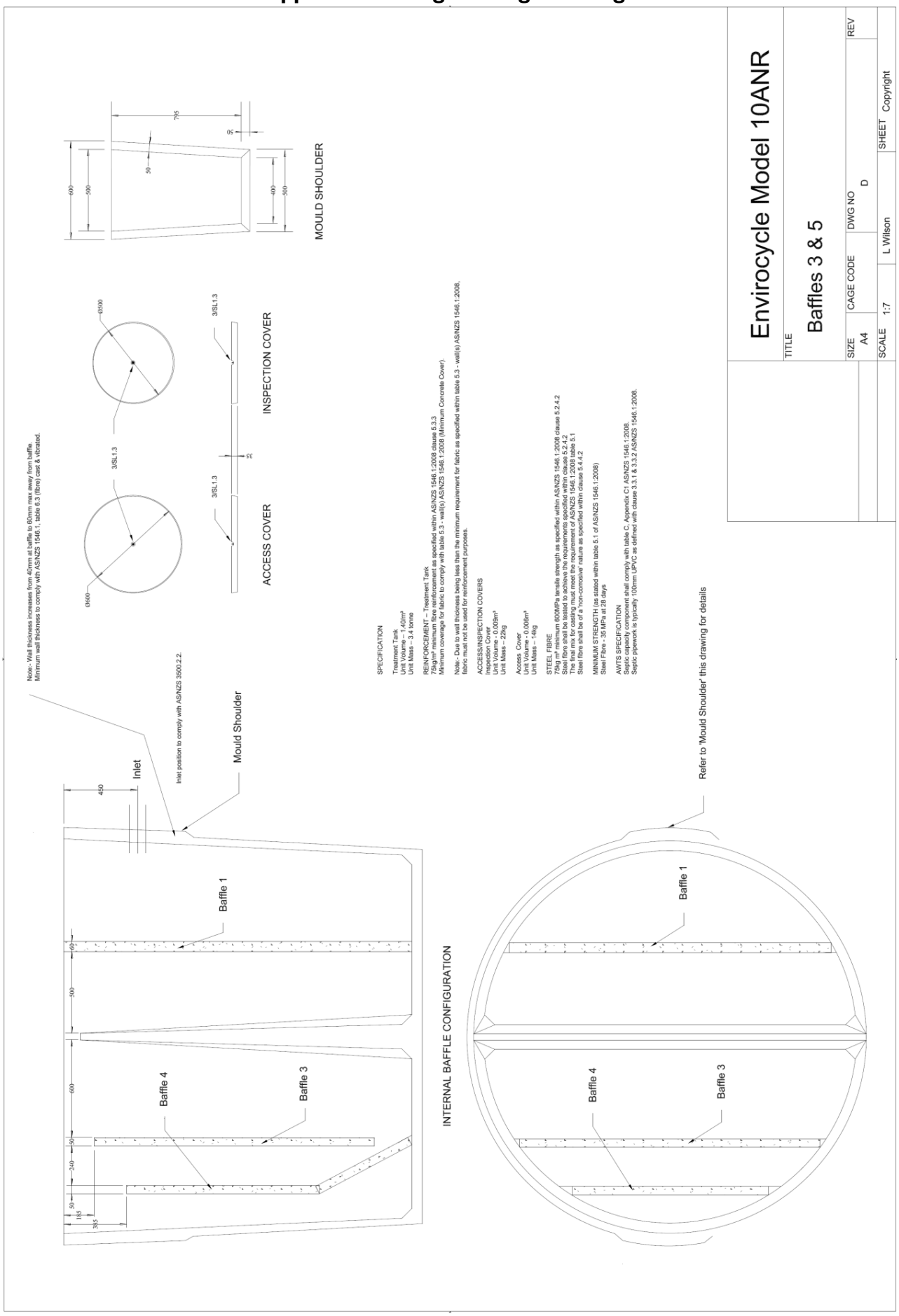


Appendix B - Engineering Drawings


Envirocycle Model 10ANR
Cross Section
SIZE A4
CAGE CODE
DWG NO C
REV
SCALE 1:7
L Wilson
SHEET
Copyright
SPECIFICATION
Treatment Tank
Unit Volume – 1.40/m³
Unit Mass – 3.4 tonne
REINFORCEMENT – Treatment Tank
75kg/m³ minimum fibre reinforcement as specified within AS/NZS 1546.1:2008 clause 5.3.3
Minimum coverage for fabric to comply with table 5.3 - wall(s) AS/NZS 1546.1:2008 (Minimum Concrete Cover).
Note:- Due to wall thickness being less than the minimum requirement for fabric as specified within table 5.3 - wall(s) AS/NZS 1546.1:2008, fabric must not be used for reinforcement purposes.
STEEL FIBRE
75kg m³ minimum 600MPa tensile strength as specified within AS/NZS 1546.1:2008 clause 5.2.4.2
Steel fibre shall be tested to achieve the requirements specified within clause 5.2.4.2
The final mix for casting must meet the requirement of AS/NZS 1546.1:2008 table 5.1
Steel fibre shall be of a 'non-corrosive' nature as specified within clause 5.4.4.2
MINIMUM STRENGTH (as stated within table 5.1 of AS/NZS 1546.1:2008)
Steel Fibre - 35 MPa at 28 days
AWTS SPECIFICATION
Septic capacity component shall comply with table C, Appendix C1 AS/NZS 1546.1:2008.
Septic pipework is typically 100mm UPVC as defined with clause 3.3.1 & 3.3.2 AS/NZS 1546.1:2008.
CROSS SECTION - 'A'
50dia to 65dia tapered hole for lifting purposes only
UPVC collar cast into tank wall to suit 100mm UPVC SN6 DWV
50dia to 65dia tapered hole for lifting purposes only
450
360
50
70
40
60
1040
1115
65
150
2298
2560
2500
100
2200

Date of issue: 17 May 2012	*Director, Building Control* *delegate of Minister for Workplace Relations*

Appendix B - Engineering Drawings


Envirocycle Model 10ANR
TITLE
Baffles 3 & 5
SIZE A4
CAGE CODE
DWG NO D
REV
SCALE 1:7
L Wilson
SHEET
Copyright
MOULD SHOULDER
INSPECTION COVER
ACCESS COVER
Note:- Wall thickness increases from 40mm at baffle to 60mm max away from baffle.
Minimum wall thickness to comply with AS/NZS 1546.1. table 6.3 (fibre) cast & vibrated.
Inlet position to comply with AS/NZS 3500.2.2.
Inlet
Mould Shoulder
Baffle 1
Baffle 4
Baffle 3
INTERNAL BAFFLE CONFIGURATION
Refer to 'Mould Shoulder' this drawing for details
SPECIFICATION
Treatment Tank
Unit Volume - 4.40m³
Unit Mass - 3.4 tonne
REINFORCEMENT – Treatment Tank
75kg/m³ minimum fibre reinforcement as specified within AS/NZS 1546.1:2008 clause 5.3.3.
Minimum coverage for fabric to comply with table 5.3 - wall(s) AS/NZS 1546.1:2008 (Minimum Concrete Cover).
Note:- Due to wall thickness being less than the minimum requirement for fabric as specified within table 5.3 – wall(s) AS/NZS 1546.1:2008, fabric must not be used for reinforcement purposes.
ACCESS/INSPECTION COVERS
Inspection Cover
Unit Volume - 0.009m³
Unit Mass – 22kg
Access Cover
Unit Volume - 0.006m³
Unit Mass – 14kg
STEEL FIBRE
75kg m³ minimum 600MPa tensile strength as specified within AS/NZS 1546.1:2008 clause 5.2.4.2
Steel fibre shall be tested to achieve the requirements specified within clause 5.2.4.2
The final mix for casting must meet the requirement of AS/NZS 1546.1:2008 table 5.1
Steel fibre shall be of a 'non-corrosive' nature as specified within clause 5.4.4.2
MINIMUM STRENGTH (as stated within table 5.1 of AS/NZS 1546.1:2008)
Steel Fibre - 35 MPa at 28 days
AWTS SPECIFICATION
Septic capacity component shall comply with table C, Appendix C1 AS/NZS 1546.1:2008.
Septic pipework is typically 100mm UPVC as defined with clause 3.3.1 & 3.3.2 AS/NZS 1546.1:2008.

Appendix C Component list and specifications

No	Description	Material	Specification
1.	Inflow Junction	PVC	Ø100 Sewer pipe Ø100 Sewer junction 90°
2.	Outflow Junction	PVC	Ø100 Sewer pipe Ø100 Sewer junction 90°
3.	Outflow Junction	PVC	Ø100 Sewer pipe Ø100 Sewer junction 90°
4.	Circulation pipe	PVC	Ø32 Pressure pipe
5.	Circulation weir	PVC	Ø32 End cap
6.	Anaerobic filter	PP	45m²/m³ surface area
7.	Filter holder	GAL	Ø11 mm
8.	Filter baffle	FRP or PP	≥ 2.0 mm
9.	Diffuser	PE	Ø30 mm
10.	Aerobic filter	PP	45m²/m³ surface area
11.	Air valve for diffuser	PVC	Ø15 valve
12.	Air lift pump	PVC	Ø32 Pressure pipe
13.	Air pipe	PVC	Ø15 Pressure
14.	Air valve for backwash	PVC	Ø15 valve
15.	Weir	PVC	Ø100 Sewer pipe Ø100 Sewer junction 90° Ø100 End cap
16.	Water level sensor	PVC	Ø76 mm
17.	Irrigation pump	Submersible	≥ 0.1KW
18.	High water level alarm	PVC	Ø15 mm
19.	Union	PVC	15mm pressure
20.	Backwash diffuser	PE	Ø30 mm
21.	Sed. Baffle	Concrete	Reinforced concrete
22.	Irrigation pump pipe	PVC	Ø25 Pressure pipe
23.	Union	PVC	25mm pressure
24.	Irrigation filter	PE	25mm
25.	UV filter	SS	Ø63 mm
26.	UV outflow pipe	PVC	25mm pressure
27.	Air blower	Air pump	100lit/min
28.	Electrical panel	Rigid PVC	See wiring diagram model 10NR
29.	Blower cover	Plastic polymer	
PS	Primary Sedimentation Chamber		
AF	Anaerobic Filtration Chamber		
CA	Contact Aeration Chamber		
SS	Secondary Sedimentation Chamber		
PU	Pump Chamber		
			Envirocycle™ Model 10ANR

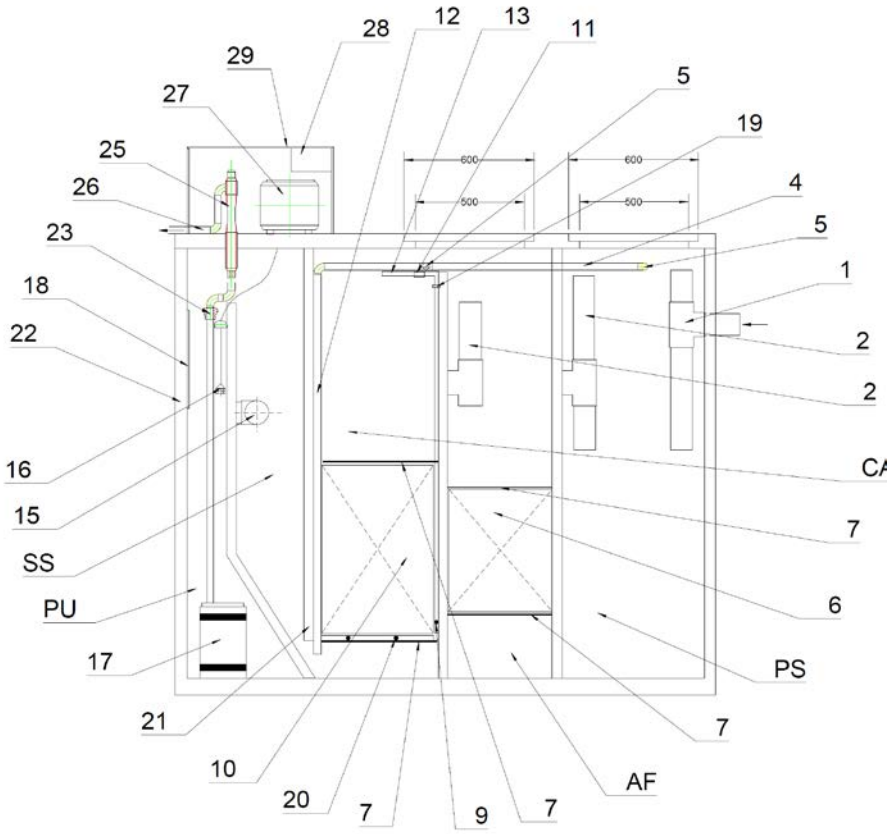
SPECIFICATION

Primary/Anaerobic		3.3004m³
Aeration		2.0430m³
Sedimentation		0.6642m³
Pump Chamber		0.3876m³
	Total	6.3876m³

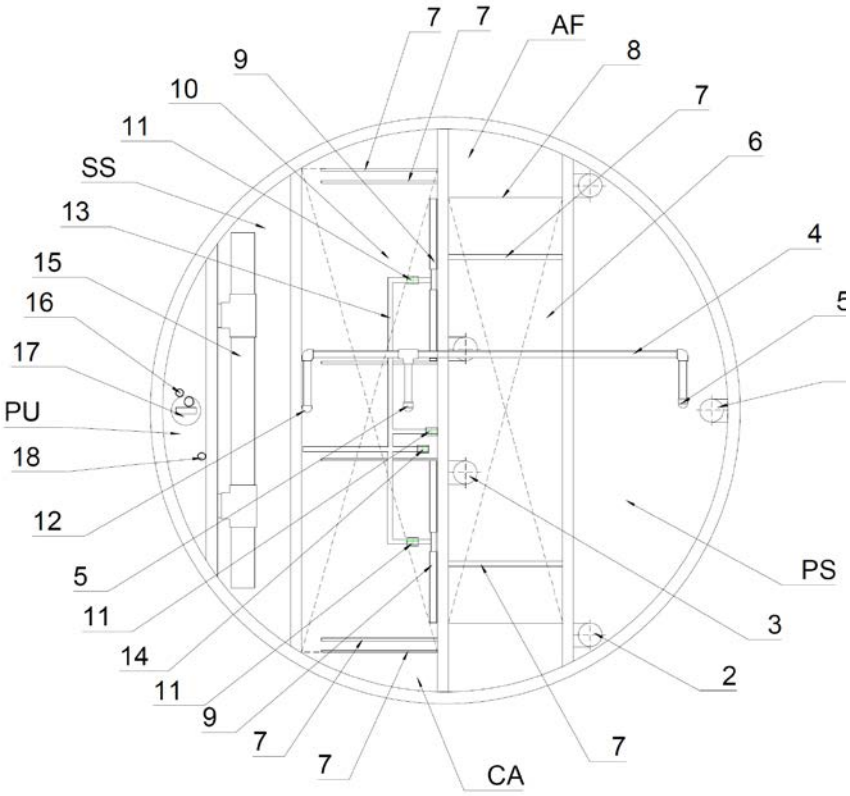
75kg/m³ minimum fibre reinforcement as specified within AS/NZS 1546.1:2008 clause 6.4.1.1.
Minimum coverage for fabric to comply with table 6.4 - wall(s) AS/NZS 1546.1:2008 (Minimum Concrete Cover).

STEEL FIBRE
75kg m³ minimum 600MPa tensile strength as specified within table 6.1, AS/NZS 1546.1:2008 and clause 6.2.4.2.
Steel fibre shall be tested to achieve the requirements specified within clause 6.3.3. The final mix for casting must meet the requirement of AS/NZS 1546.1:2008 clause 6.4. Steel fibre shall be of a 'non-corrosive' nature as specified within clause 6.7.2.

Side elevation



Plan



Date of issue: 17 May 2012	*Director, Building Control* *delegate of Minister for Workplace Relations*